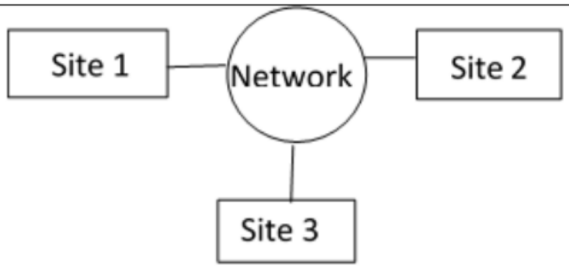
SVKM's
D. J. Sanghvi College of Engineering

Program: B.Tech in Computer Engineering **Academic Year: 2022** **Duration: 3 hours**
Date: 12.01.2023
Time: 10:30 am to 01:30 pm
Subject: Advanced Database Management System (Semester V) **Marks: 75**

Instructions: Candidates should read carefully the instructions printed on the question paper and on the cover page of the Answer Book, which is provided for their use.
(1) This question paper contains two pages.
(2) All Questions are Compulsory.
(3) All questions carry equal marks.
(4) Answer to each new question is to be started on a fresh page.
(5) Figures in the brackets on the right indicate full marks.
(6) Assume suitable data wherever required, but justify it.
(7) Draw the neat labelled diagrams, wherever necessary.

Question No.		Max. Marks
Q1(a)	Draw and explain architecture of Distributed Database Management System. OR Explain architecture of Federated Database.	[10] [10]
Q1(b)	What is Dense Index how it differs with Sparse Index, explain with example. OR What parameters are considered to measure query cost?	[05] [05]
Q2(a)	How to measure query cost for selection operation with and without index. OR Explain Uni-Temporal Relations and Bi-Temporal Relations with examples.	[10] [10]
Q2(b)	Explain Raster Data Model with neat diagram. OR Differentiate between JSON and XML	[05] [05]
Q3(a)	Consider the database given below Emp(eid, ename, salary, address, did) Dept(did, dname, loc) Write different evaluation plans for the query to find name and salary of all computer department employees.	[10]

Q3(b)	Distinguish between Document Oriented Database and Traditional Database	[05]
Q4(a)	 Consider distributed database system where site1 stores employee relation with 1000 tuples and site2 stores department relation with 500 tuples. Emp(eid, ename, salary, address, did) Dept(did, dname, loc) The size of the attributes are eid 4bytes,ename 10 bytes, salary 8 bytes, address 25 bytes, did 10 bytes, dname 10 bytes, location 15 bytes. Assumes that the resultant relation with 1000 tuples. Find the name of employees with their salary and department names. Also, find the amount of data transfer to execute this query when the query is submitted to Site 3 with simple join and semi-join. OR How fragmentation works in DDB? What are its types explain each with example.	[10] [10]
Q4(b)	What is the need of Object Oriented Database.	[05]
Q5(a)	Explain different discretionary access control based on Granting and Revoking privileges.	[10]
Q5(b)	Explain different types of Spatial models.	[05]